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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,923	10/04/2000	Kenneth G, DeRoche	K-1633	7253

7590 08/16/2004  
Larry R. Meenan  
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Latrobe, PA 15650

EXAMINER

TSAI, HENRY

ART UNIT PAPER NUMBER

2183

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/678,923

Applicant(s)

DEROCHE ET AL.

Examiner

Henry W.H. Tsai

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 5/10/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/4/00 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "Y" in Fig. 4. Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "the axial rake angle of the inserts varies between flutes, and within each flute to provide single all effective cutting" (in claim 1) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Note in Fig. 4, there is a gap "Y" in axial direction between the adjacent inserts. The arrangement of the insert can not provide single all effective cutting as claimed.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

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any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 5, line 3, it is not clear what is the definition of "adjacent inserts" since the direction of the relative location of the inserts was not well defined. Further, in lines 2-3, how could "the actual lengths of adjacent inserts in any flute do not circumferentially overlap" provide single all effective cutting as described in claim 1 ?

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In claim 6, line 2, how could "the cutting edges on adjacent inserts in any flute do not circumferentially overlap" provide single all effective cutting as described in claim 1 ?

Applicant is required to review the claims and correct all language which does not comply with 35 U.S.C. § 112, second paragraph.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujimura et al. (U.S. Patent No. 4,844,666), hereafter referred to as Tsujimura et al.'666 in view of Dotany (U.S. Patent No. 5,083,887), hereafter referred to as Dotany'887.

Referring to claim 1, Tsujimura et al.'666 discloses the claimed invention comprising, a tool body having an outer

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surface thereon and a central axis therein and including at least a first (including 24a, see Fig. 15) and second (including 24b, see Fig. 15) spiraling flute in the outer surface, each flute including a plurality of inserts (24a, 24b, see Fig. 15) secured therein to define an axial rake angle, wherein the axial rake angle of the inserts (24a, 24b, see Fig. 15) varies between flutes(e.g., changing from a1 to a4), and within each flute (changing from a1, a2, to a3 for the flute having inserts 24a, see Fig. 15) to provide all effective cutting. Note the combination of the cutting flutes as shown in Fig. 15 provides all effective cutting

Note Tsujimura et al. also discloses the limitations described:

in claim 2, all of the inserts (24a, 24b, see Fig. 15) on the entire tool body being identical;

in claim 6, the cutting edges on adjacent inserts (such as 24a, 24a, see Fig. 15) in any flute do not circumferentially overlap; and

in claim 7, the inserts (24a, 24b, see Fig. 15) each having a cutting edge and the cutting edges on inserts with differing axial rake angles have differing cutting edge lengths (see Fig. 15).



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Tsujimura et al. discloses the claimed invention except for: providing single flute all effective cutting.

Dotany'887 discloses a helical cutting tool comprising the flute to provide single flute all effective cutting (see Fig. 1, and Col. 4, lines 14-16, regarding the overlapping relation in the axial direction indicated by dimension "A" as shown in Fig. 1)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsujimura et al.'666's tool to comprise the flute providing single flute all effective cutting, as taught by Dotany'887, in order to have a continuous, non-interrupted cutting line to facilitate the smooth cutting process and chip removal for the Tsujimura et al.'666's tool.

7. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsujimura et al.'666 in view of Dotany'887 as applied to claims 1, 2, 6, and 7 above, and further in view of Dutschke et al. (U.S. Patent No. 5,425,603), hereafter referred to as Dutschke et al.'603.

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Tsujimura et al.'666 in view of Dotany'887 discloses the claimed invention except for: the tool body including three spiraling flutes (in claim 3).

Dutschke et al.'603 discloses a cutting insert comprising the tool body including three spiraling flutes (18, see Figs. 3a, 3b ).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Tsujimura et al.'666/Dotany'887's tool to comprise the tool body including three spiraling flutes, as taught by Dutschke et al.'603, since it is just an alternative flute arrangement comparing with the structure of the Tsujimura et al.'666/Dotany'887's tool.

As to claim 4, Tsujimura et al.'666/Dotany'887 also discloses: all of the inserts (24a, 24b in Tsujimura et al.'666 and 4, 4 in Dotany'887) on the entire tool body being identical.

As to claim 5, Tsujimura et al.'666 also discloses: each insert (such as 24a, 24a, see Fig. 15) having an actual length longer than the cutting edge (since each cutting insert has an axial rake angle as shown in Fig. 15), and the actual lengths of adjacent inserts (such as 24a, 24a, see Fig. 15) in any flute do not circumferentially overlap.

### **Response to Arguments**

8. Applicant's arguments mailed 5/10/04 have been considered but are moot in view of the new ground(s) of rejection. As set forth in the art rejections above, Tsujimura et al.'666, Dotany'887, and Dutschke et al.'603 teach the claimed invention.

### **Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

### **Contact Information**

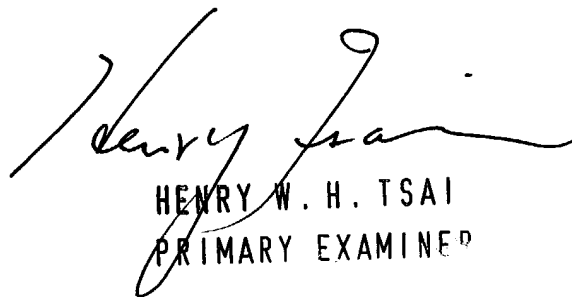
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 receptionist whose telephone number is (703) 305-3900.

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11. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into

**the Group at fax number: 703-872-9306.**

This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.



HENRY W. H. TSAI  
PRIMARY EXAMINER

August 7, 2004